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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,588	05/09/2001	Takashi Matsumoto	HASH0011UPCTUS	4260

31518 7590 01/29/2004

NEIFELD IP LAW, PC  
2001 JEFFERSON DAVIS HIGHWAY  
ARLINGTON, VA 22202

EXAMINER
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CASIANO, ANGEL L

ART UNIT	PAPER NUMBER
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2182

DATE MAILED: 01/29/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application N .

09/830,588

Applicant(s)

MATSUMOTO, TAKASHI

Examiner

Angel L. Casiano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*Intzm. Flair*  
FRITZ FLEWING  
PRIMARY EXAMINER  
GROUP 2100

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☒ Interview Summary (PTO-413) Paper No(s) 3.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The present Office action is in response to application filed 09 May 2001.
2. In previous Office action dated 23 September 2003, claims 3-10 were renumbered as 2-9. Following interview with attorney for the applicant, the number of pending claims has been corrected. The Preliminary Amendment amended claims 1, 3-7 and added claims 8-10. Claim 2 remains as originally filed.
3. Accordingly, previous Office action is being withdrawn in view of the incorrect number of pending claims. In the present Office action, all claims (1-10) have been considered and examined accordingly.
4. The present Office action restarts the Shortened Statutory Period for Reply.

#### ***Priority***

5. Acknowledgement is made of Priority claim for the present application as filed under 35 U.S.C. 371. Priority date for 09 September 1999 has been claimed.

#### ***Information Disclosure Statement***

6. The information disclosure statement (IDS) submitted on 06 September 2001 was filed after the mailing date of the application on 09 May 2001. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Drawings***

7. Figures 6-8 (see "Conventional systems") should be designated by a legend such as -- Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to because:

- Fig. 2, "26" should be labeled as to its function.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

9. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

10. Substitute specification has been received and entered.

***Claim Rejections - 35 USC § 112***

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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12. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, this cites “indicating that there is an *unprocessed request*”. However, it is unclear in the present claim, in the cited step of “allocating”, which component indicates the unprocessed request, as disclosed.

Claims 2-6 depend on claim 1 and therefore carry the previous rejection under 35 U.S.C. 112, second paragraph.

13. Claim 3 recites, “obtaining the physical address of the request storing area of the process”. This claim depends on claim 1, but this does not disclose a “physical address”.

Claim 4 recites the limitation "wherein the physical address" in reference to claim 1. However, claim 1 does not disclose a “physical address”.

Claim 6 recites the limitations "physical address" and “embedded memory” in reference to claim 1.

There is insufficient antecedent basis for these limitations in the claims.

14. Regarding claim 7, the recording medium cites “indicating that there is an *unprocessed request*”. However, it is unclear in the present claim, regarding the step of “*allocating*”, which component indicates the unprocessed request, as disclosed.

***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Priem et al. [US 6,081,854].

Regarding claim 8, Priem et al. cites an address decoding (see col. 5, line 1) method (see col. 2, line 35) for selecting an object device (see "Abstract") in a computer system. The method disclosed by the cited art teaches the step of selecting an object device (see col. 6, line 57) using only a portion of the physical address space for decoding (see col. 5, lines 5-10). Priem et al. does not expressly teach the step of "using another part of the physical address as an identifier for distinguishing multiple physical addresses selecting the object device". In addition, the cited art does not explicitly disclose the step of "using the identifier in order to identify an application process having accessed the object device". However, Priem et al. does teach identifying an application accessing an object device (inherent, see "Title"; col. 5, lines 43-49). Accordingly, it

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would have been obvious to one of ordinary skill in the art at the time of the invention that the cited method, as disclosed by the reference would have been capable of identifying a case where multiple physical addresses select the object device. It should be noted that by identifying the applications having access to the object device, the cited prior art teaches a system for fast data transfers to I/O devices.

Regarding claim 9, this is oriented to the computer system having an address decoder selecting an object device, as disclosed in the method of claim 8. Claim 8 is rejected in the present Office action as being unpatentable over Priem et al. Accordingly, Priem et al. also teaches the computer system having the decoder, which performs the decoding steps of claim 8. Claim 9 is rejected under the same rationale.

As for claim 10, Priem et al. executes requests corresponding to the application process by the object device (inherent, see col. 5, lines 4-10, 43-49; col. 6, lines 56-64) based on contents of access (see "initiated"; col. 5, lines 48-49).

#### ***Allowable Subject Matter***

17. Claims 1-7 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

18. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest, alone or in combination, a program having the steps of allocating, writing, notifying or reading, as set forth in the claims. The prior art does not expose

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an “allocating” step for a context identifier, by the operating system, as an indication of a “request storing area for the process”. The cited step is claimed as further “mapping a memory page” related to the context identifier as an accessing address to a register. The “allocating” step teaches an indication that there is an unprocessed request. The “writing” step, as claimed in the application discloses a “process” for writing the contents of operation requests to the I/O (device or interface) into the “request storing area”. The claimed program notifies, by the “process” the existence of an “unprocessed request” by the use of the accessing address for the “pending register”. In addition, the claimed program implements the step of “reading” by the I/O element (device or interface, as claimed), the operation requests of the process, which are stored at the location previously identified in the “pending register”.

### *Conclusion*

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Boucher et al. [US 6,434,620 B1] teaches a network interface device.
- Mc Carthy et al. [US 6,321,310 B1] teaches memory architecture for a computer system.
- Priem et al. [US 6,065,071] discloses method and apparatus for trapping unimplemented operations in I/O devices.
- Priem et al. [US 5,887,190] teaches an I/O control unit.
- Loo et al. [US 5,845,325] discloses virtual address write back cache with address reassignment and cache block flush.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel L. Casiano whose telephone number is 703-305-8301. The examiner can normally be reached on 8:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-3301. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

alc

January 12, 2004

  
FRITZ FLEMING  
PRIMARY EXAMINER  
GROUP 2100